

SEQUENCE LISTING

(1) GENERAL INFORMATION

(i) APPLICANT: Presnell, Scott R.
Gilbert, Teresa

(ii) TITLE OF THE INVENTION: MAMMALIAN CYTOKINE-LIKE
FACTOR-7

(iii) NUMBER OF SEQUENCES: 43

(iv) CORRESPONDENCE ADDRESS:

- (A) ADDRESSEE: ZymoGenetics, Inc.
- (B) STREET: 1201 Eastlake Avenue East
- (C) CITY: Seattle
- (D) STATE: WA
- (E) COUNTRY: USA
- (F) ZIP: 98102

(v) COMPUTER READABLE FORM:

- (A) MEDIUM TYPE: Diskette
- (B) COMPUTER: IBM Compatible
- (C) OPERATING SYSTEM: DOS
- (D) SOFTWARE: FastSEQ for Windows Version 2.0

(vi) CURRENT APPLICATION DATA:

- (A) APPLICATION NUMBER:
- (B) FILING DATE:
- (C) CLASSIFICATION:

(vii) PRIOR APPLICATION DATA:

- (A) APPLICATION NUMBER:
- (B) FILING DATE:

(viii) ATTORNEY/AGENT INFORMATION:

- (A) NAME: Lunn, Paul G
- (B) REGISTRATION NUMBER: 32,743
- (C) REFERENCE/DOCKET NUMBER: 97-15

(ix) TELECOMMUNICATION INFORMATION:

- (A) TELEPHONE: 206-442-6627
- (B) TELEFAX: 206-442-6678
- (C) TELEX:

(2) INFORMATION FOR SEQ ID NO:1:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 736 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA
 (ix) FEATURE:

(A) NAME/KEY: Coding Sequence
 (B) LOCATION: 57...596
 (D) OTHER INFORMATION:

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

GAATTCTGGCA CGAGGAGGCG GGCAGCAGCT GCAGGCTGAC CTTGCAGCTT GGCGGA
 ATG 59

Met

1

GAC TGG CCT CAC AAC CTG CTG TTT CTT CTT ACC ATT TCC ATC TTC
 CTG 107

Asp Trp Pro His Asn Leu Leu Phe Leu Leu Thr Ile Ser Ile Phe
 Leu

5 10 15

GGG CTG GGC CAG CCC AGG AGC CCC AAA AGC AAG AGG AAG GGG CAA
 GGG 155

Gly Leu Gly Gln Pro Arg Ser Pro Lys Ser Lys Arg Lys Gly Gln
 Gly

20 25 30

CGG CCT GGG CCC CTG GCC CCT GGC CCT CAC CAG GTG CCA CTG GAC
 CTG 203

Arg Pro Gly Pro Leu Ala Pro Gly Pro His Gln Val Pro Leu Asp
 Leu

35 40 45

GTG TCA CGG ATG AAA CCG TAT GCC CGC ATG GAG GAG TAT GAG AGG
 AAC 251

Val Ser Arg Met Lys Pro Tyr Ala Arg Met Glu Glu Tyr Glu Arg
 Asn

50 55 60
 65

ATC GAG GAG ATG GTG GCC CAG CTG AGG AAC AGC TCA GAG CTG GCC
 CAG 299

Ile Glu Glu Met Val Ala Gln Leu Arg Asn Ser Ser Glu Leu Ala
 Gln

70 75 80

AGA AAG TGT GAG GTC AAC TTG CAG CTG TGG ATG TCC AAC AAG AGG
 AGC 347

Arg	Lys	Cys	Glu	Val	Asn	Leu	Gln	Leu	Trp	Met	Ser	Asn	Lys	Arg
Ser														
85														95
CTG	TCT	CCC	TGG	GGC	TAC	AGC	ATC	AAC	CAC	GAC	CCC	AGC	CGT	ATC
CCC														
395														
Leu	Ser	Pro	Trp	Gly	Tyr	Ser	Ile	Asn	His	Asp	Pro	Ser	Arg	Ile
Pro														
100														110
GTG	GAC	CTG	CCG	GAG	GCA	CGG	TGC	CTG	TGT	CTG	GGC	TGT	GTG	AAC
CCC														
443														
Val	Asp	Leu	Pro	Glu	Ala	Arg	Cys	Leu	Cys	Leu	Gly	Cys	Val	Asn
Pro														
115														125
TTC	ACC	ATG	CAG	GAG	GAC	CGC	AGC	ATG	GTG	AGC	GTG	CCG	GTG	TTC
AGC														
491														
Phe	Thr	Met	Gln	Glu	Asp	Arg	Ser	Met	Val	Ser	Val	Pro	Val	Phe
Ser														
130														140
145														
CAG	GTT	CCT	GTG	CGC	CGC	CTC	TGC	CCG	CCA	CCG	CCC	CGC	ACA	
GGG														
539														
Gln	Val	Pro	Val	Arg	Arg	Arg	Leu	Cys	Pro	Pro	Pro	Pro	Arg	Thr
Gly														
150														160
CCT	TGC	CGC	CAG	CGC	GCA	GTC	ATG	GAG	ACC	ATC	GCT	GTG	GGC	TGC
ACC														
587														
Pro	Cys	Arg	Gln	Arg	Ala	Val	Met	Glu	Thr	Ile	Ala	Val	Gly	Cys
Thr														
165														175
TGC	ATC	TTC	TGAATCACCT	GGCCCAGAAG	CCAGGCCAGC	AGCCCGAGAC								
CATCCTCCT														
645														
Cys	Ile	Phe												
180														
TGCACCTTG	TGCCAAGAAA	GGCCTATGAA	AACTAACAC	TGACTTTGA										
AAGCCAGAAA														
705														
AAAAAAAAAA	AAAAAAAATT	CCTGCGGCCG	C											
736														

(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 180 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: protein
- (v) FRAGMENT TYPE: internal

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

Met Asp Trp Pro His Asn Leu Leu Phe Leu Leu Thr Ile Ser Ile
 Phe
 1 5 10 15
 Leu Gly Leu Gly Gln Pro Arg Ser Pro Lys Ser Lys Arg Lys Gly
 Gln
 20 25 30
 Gly Arg Pro Gly Pro Leu Ala Pro Gly Pro His Gln Val Pro Leu
 Asp
 35 40 45
 Leu Val Ser Arg Met Lys Pro Tyr Ala Arg Met Glu Glu Tyr Glu
 Arg
 50 55 60
 Asn Ile Glu Glu Met Val Ala Gln Leu Arg Asn Ser Ser Glu Leu
 Ala
 65 70 75
 80
 Gln Arg Lys Cys Glu Val Asn Leu Gln Leu Trp Met Ser Asn Lys
 Arg
 85 90 95
 Ser Leu Ser Pro Trp Gly Tyr Ser Ile Asn His Asp Pro Ser Arg
 Ile
 100 105 110
 Pro Val Asp Leu Pro Glu Ala Arg Cys Leu Cys Leu Gly Cys Val
 Asn
 115 120 125
 Pro Phe Thr Met Gln Glu Asp Arg Ser Met Val Ser Val Pro Val
 Phe
 130 135 140
 Ser Gln Val Pro Val Arg Arg Arg Leu Cys Pro Pro Pro Pro Arg
 Thr
 145 150 155
 160
 Gly Pro Cys Arg Gln Arg Ala Val Met Glu Thr Ile Ala Val Gly
 Cys
 165 170 175
 Thr Cys Ile Phe
 180

(2) INFORMATION FOR SEQ ID NO:3:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 397 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: Other

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

AGGCGGGCAN AGCTGCAGGC TGACCTTGCA GCTTGGCGGA ATGGACTGGC
 CTCACAACCT 60
 GCTGTTCTT CTTACCATT CCATCTTCCT GGGGCTGGGC AGCCAGGAGC
 CCCAAAAGCA 120
 AGAGGAAGGG GCAAGGGCGG CCTGGGCCCN TGGCCTGGCC TCACCAGGTG
 CCACTGGACC 180
 TGGTGTACG GATGAAACCG TATGCCCGCA TGGAGGAGTA TGAGAGGAAC
 ATCGAGGAGA 240
 TGGTGGCCCA GCTGAGGAAC AGCTCANAAG CTGGCCCAGA GAAAGTGTGA
 GGTCAACTTG 300
 CAGCTGTGGA TGTCCAACAA GAAGGAGCCT GTCTCCCTTG GGGCTACAAG
 CATCAACCAC 360
 CGACCCCCAGC CGTATCCCCG TGGGACCTTG CCGGGAC
 397

(2) INFORMATION FOR SEQ ID NO:4:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: Other

(vii) IMMEDIATE SOURCE:

(B) CLONE: ZC13265

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

TTACCATTTC CATCTTCC

18

(2) INFORMATION FOR SEQ ID NO:5:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: Other

(vii) IMMEDIATE SOURCE:

(B) CLONE: ZC13266

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

CCCTTCCTCT TGCTTTG
18

(2) INFORMATION FOR SEQ ID NO:6:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 29 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: Other

(vii) IMMEDIATE SOURCE:

- (B) CLONE: ZC13326

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

CAAGGATCCC AGCCCAGGAG CCCCAAAAG
29

(2) INFORMATION FOR SEQ ID NO:7:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 30 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: Other

(vii) IMMEDIATE SOURCE:

- (B) CLONE: ZC13330

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

GACCTCGAGT CAGAAGATGC AGGTGCAGCC
30

(2) INFORMATION FOR SEQ ID NO:8:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 30 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: Other

(vii) IMMEDIATE SOURCE:

- (B) CLONE: ZC13325

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

GTCGAATTCA TGGACTGGCC TCACAAACCTG
30

(2) INFORMATION FOR SEQ ID NO:9:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 27 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: Other

(vii) IMMEDIATE SOURCE:

- (B) CLONE: ZC13327

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

GAAGGGATCCG AAGATGCAGG TGCAGCC
27

(2) INFORMATION FOR SEQ ID NO:10:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

Asp Tyr Lys Asp Asp Asp Lys Gly Ser
1 5 10

(2) INFORMATION FOR SEQ ID NO:11:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 692 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: Coding Sequence
- (B) LOCATION: 50...589
- (D) OTHER INFORMATION:

TTG CCC GAG GCG CGG TGC CTA TGT TTG GGT TGC GTG AAT CCC TTC			
ACC 442			
Leu Pro Glu Ala Arg Cys Leu Cys Leu Gly Cys Val Asn Pro Phe			
Thr	120	125	130
ATG CAG GAG GAC CGT AGC ATG GTG AGC GTG CCA GTG TTC AGC CAG			
GTG 490			
Met Gln Glu Asp Arg Ser Met Val Ser Val Pro Val Phe Ser Gln			
Val	135	140	145
CCG GTG CGC CGC CTC TGT CCT CAA CCT CCT CGC CCT GGG CCC			
TGC 538			
Pro Val Arg Arg Arg Leu Cys Pro Gln Pro Pro Arg Pro Gly Pro			
Cys	150	155	160
CGC CAG CGT GTC GTC ATG GAG ACC ATC GCT GTG GGT TGC ACC TGC			
ATC 586			
Arg Gln Arg Val Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys			
Ile	165	170	175
TTC TGAGCCAACC ACCAACCCGG TGGCCTCTGC AACAAACCTC CCTCCCTGCA			
CCCACT 645			
Phe			
180			
GTGACCCTCA AGGCTGATAA ACAGTAAACG CTGTTCTTG TAAAGGA			
692			

(2) INFORMATION FOR SEQ ID NO:12:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 180 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(v) FRAGMENT TYPE: internal

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

Met Asp Trp Pro His Ser Leu Leu Phe Leu Leu Ala Ile Ser Ile			
Phe			
1	5	10	15

(2) INFORMATION FOR SEQ ID NO:13:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 497 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

GGGGTTCCTG GCGGGTGGCA GCTGCGGGCC TGCCGCCTGA CTTGGTGGGA
TGGACTGGCC 60

GCACAGCCTG	CTCTTCCTCC	TGGCCATCTC	CATCTTCCTG	GCGCCAAGCC
ACCCCCGGAA	120			
CACCAAAGGC	AAAAGAAAAG	GGCAAGGGAG	GCCCAGTCCC	TTGGCCCCCTG
GGCTCATCAG	180			
GTGCCGCTGG	ACCTGGTGTC	TCGAGTAAAG	CCCTACGCTC	GAATGGAAGA
GTATGAGCGG	240			
AACCTTGGGG	AGATGGTGGC	CCAGCTGAGG	AACAGCTCCG	AGCCAGCCAA
GAAGAAATGT	300			
GAAGTCAATC	TACAGCTGTG	GTTGTCCAAC	AAGAGGAGCC	TGTCCCCATG
GGGCTACAGC	360			
ATCAACCACG	ACCCCCAGCCG	CATCCCTGCG	GACTTGCCCG	AGGCGCGGTG
CCTATGTTG	420			
GGTTGCGTGA	ATCCCTTCAC	CATGCAGGAG	GACCGTAGCA	TGGTGAGCGT
GCCAGTGTTC	480			
AGCCAGGTGC	CGGTGCG			

(2) INFORMATION FOR SEQ ID NO:14:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 160 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

Gln	Pro	Arg	Ser	Pro	Lys	Ser	Lys	Arg	Lys	Gly	Gln	Gly	Arg	Pro
Gly														
1				5					10					15
Pro	Leu	Ala	Pro	Gly	Pro	His	Gln	Val	Pro	Leu	Asp	Leu	Val	Ser
Arg														
				20				25						30
Met	Lys	Pro	Tyr	Ala	Arg	Met	Glu	Glu	Tyr	Glu	Arg	Asn	Ile	Glu
Glu														
				35			40							45
Met	Val	Ala	Gln	Leu	Arg	Asn	Ser	Ser	Glu	Leu	Ala	Gln	Arg	Lys
Cys														
				50			55							60
Glu	Val	Asn	Leu	Gln	Leu	Trp	Met	Ser	Asn	Lys	Arg	Ser	Leu	Ser
Pro														
65														
80														
Trp	Gly	Tyr	Ser	Ile	Asn	His	Asp	Pro	Ser	Arg	Ile	Pro	Val	Asp
Leu														
				85				90						95
Pro	Glu	Ala	Arg	Cys	Leu	Cys	Leu	Gly	Cys	Val	Asn	Pro	Phe	Thr
Met														
				100				105						110

Gln	Glu	Asp	Arg	Ser	Met	Val	Ser	Val	Pro	Val	Phe	Ser	Gln	Val
Pro														
	115						120						125	
Val	Arg	Arg	Arg	Leu	Cys	Pro	Pro	Pro	Pro	Arg	Thr	Gly	Pro	Cys
Arg														
	130					135					140			
Gln	Arg	Ala	Val	Met	Glu	Thr	Ile	Ala	Val	Gly	Cys	Thr	Cys	Ile
Phe														
	145					150					155			
160														

(2) INFORMATION FOR SEQ ID NO:15:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 160 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

Gln	Pro	Arg	Ala	Pro	Lys	Ser	Lys	Arg	Lys	Gly	Gln	Gly	Arg	Pro
Gly														
1		5					10						15	
Pro	Leu	Ala	Pro	Gly	Pro	His	Gln	Val	Pro	Leu	Asp	Leu	Val	Ser
Arg														
	20						25						30	
Met	Lys	Pro	Tyr	Ala	Arg	Met	Glu	Glu	Tyr	Glu	Arg	Asn	Ile	Glu
Glu														
	35						40						45	
Met	Val	Ala	Gln	Leu	Arg	Asn	Ser	Ser	Glu	Leu	Ala	Gln	Arg	Lys
Cys														
	50						55						60	
Glu	Val	Asn	Leu	Gln	Leu	Trp	Met	Ser	Asn	Lys	Arg	Ser	Leu	Ser
Pro														
	65						70						75	
80														
Trp	Gly	Tyr	Ser	Ile	Asn	His	Asp	Pro	Ser	Arg	Ile	Pro	Val	Asp
Leu														
	85						90						95	
Pro	Glu	Ala	Arg	Cys	Leu	Cys	Leu	Gly	Cys	Val	Asn	Pro	Phe	Thr
Met														
	100						105						110	
Gln	Glu	Asp	Arg	Ser	Met	Val	Ser	Val	Pro	Val	Phe	Ser	Gln	Val
Pro														
	115						120						125	
Val	Arg	Arg	Arg	Leu	Cys	Pro	Pro	Pro	Pro	Arg	Thr	Gly	Pro	Cys
Arg														
	130						135						140	

Gln Arg Ala Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile
 Phe
 145 150 155
 160

(2) INFORMATION FOR SEQ ID NO:16:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 160 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

Gln Pro Arg Ser Pro Lys Ala Lys Arg Lys Gly Gln Gly Arg Pro
 Gly
 1 5 10 15
 Pro Leu Ala Pro Gly Pro His Gln Val Pro Leu Asp Leu Val Ser
 Arg
 20 25 30
 Met Lys Pro Tyr Ala Arg Met Glu Glu Tyr Glu Arg Asn Ile Glu
 Glu
 35 40 45
 Met Val Ala Gln Leu Arg Asn Ser Ser Glu Leu Ala Gln Arg Lys
 Cys
 50 55 60
 Glu Val Asn Leu Gln Leu Trp Met Ser Asn Lys Arg Ser Leu Ser
 Pro
 65 70 75
 80
 Trp Gly Tyr Ser Ile Asn His Asp Pro Ser Arg Ile Pro Val Asp
 Leu
 85 90 95
 Pro Glu Ala Arg Cys Leu Cys Leu Gly Cys Val Asn Pro Phe Thr
 Met
 100 105 110
 Gln Glu Asp Arg Ser Met Val Ser Val Pro Val Phe Ser Gln Val
 Pro
 115 120 125
 Val Arg Arg Arg Leu Cys Pro Pro Pro Pro Arg Thr Gly Pro Cys
 Arg
 130 135 140
 Gln Arg Ala Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile
 Phe
 145 150 155
 160

(2) INFORMATION FOR SEQ ID NO:17:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 160 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

Gln Pro Arg Ser Pro Lys Ser Lys Arg Lys Gly Gln Gly Arg Pro
 Ala
 1 5 10 15
 Pro Leu Ala Pro Gly Pro His Gln Val Pro Leu Asp Leu Val Ser
 Arg
 20 25 30
 Met Lys Pro Tyr Ala Arg Met Glu Glu Tyr Glu Arg Asn Ile Glu
 Glu
 35 40 45
 Met Val Ala Gln Leu Arg Asn Ser Ser Glu Leu Ala Gln Arg Lys
 Cys
 50 55 60
 Glu Val Asn Leu Gln Leu Trp Met Ser Asn Lys Arg Ser Leu Ser
 Pro
 65 70 75
 80
 Trp Gly Tyr Ser Ile Asn His Asp Pro Ser Arg Ile Pro Val Asp
 Leu
 85 90 95
 Pro Glu Ala Arg Cys Leu Cys Leu Gly Cys Val Asn Pro Phe Thr
 Met
 100 105 110
 Gln Glu Asp Arg Ser Met Val Ser Val Pro Val Phe Ser Gln Val
 Pro
 115 120 125
 Val Arg Arg Arg Leu Cys Pro Pro Pro Pro Arg Thr Gly Pro Cys
 Arg
 130 135 140
 Gln Arg Ala Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile
 Phe
 145 150 155
 160

(2) INFORMATION FOR SEQ ID NO:18:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 160 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

Gln Pro Arg Ser Pro Lys Ser Lys Arg Lys Gly Gln Gly Arg Pro
 Gly
 1 5 10 15
 Pro Leu Ala Pro Gly Pro His Gln Val Pro Leu Asp Leu Val Ala
 Arg
 20 25 30
 Met Lys Pro Tyr Ala Arg Met Glu Glu Tyr Glu Arg Asn Ile Glu
 Glu
 35 40 45
 Met Val Ala Gln Leu Arg Asn Ser Ser Glu Leu Ala Gln Arg Lys
 Cys
 50 55 60
 Glu Val Asn Leu Gln Leu Trp Met Ser Asn Lys Arg Ser Leu Ser
 Pro
 65 70 75
 80
 Trp Gly Tyr Ser Ile Asn His Asp Pro Ser Arg Ile Pro Val Asp
 Leu
 85 90 95
 Pro Glu Ala Arg Cys Leu Cys Leu Gly Cys Val Asn Pro Phe Thr
 Met
 100 105 110
 Gln Glu Asp Arg Ser Met Val Ser Val Pro Val Phe Ser Gln Val
 Pro
 115 120 125
 Val Arg Arg Arg Leu Cys Pro Pro Pro Pro Arg Thr Gly Pro Cys
 Arg
 130 135 140
 Gln Arg Ala Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile
 Phe
 145 150 155
 160

(2) INFORMATION FOR SEQ ID NO:19:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 160 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

(2) INFORMATION FOR SEQ ID NO:20:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 160 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

Gln Pro Arg Ser Pro Lys Ser Lys Arg Lys Gly Gln Gly Arg Pro
 Gly 1 5 10 15
 Pro Leu Ala Pro Gly Pro His Gln Val Pro Leu Asp Leu Val Ser
 Arg

20	25	30
Met Lys Pro Tyr Ala Arg Met Glu Glu Tyr Glu Arg Asn Ile Glu		
Glu		
35	40	45
Met Val Ala Gln Leu Arg Asn Ser Ser Glu Leu Ala Gln Arg Lys		
Cys		
50	55	60
Glu Val Asn Leu Gln Leu Trp Met Ser Asn Lys Arg Ser Leu Ser		
Pro		
65	70	75
80		
Trp Gly Tyr Ser Ile Asn His Asp Pro Ser Arg Ile Pro Val Asp		
Leu		
85	90	95
Pro Glu Ala Arg Cys Leu Cys Leu Gly Cys Val Asn Pro Phe Thr		
Met		
100	105	110
Gln Glu Asp Arg Ser Met Val Ser Val Pro Val Phe Ser Gln Val		
Pro		
115	120	125
Val Arg Arg Arg Leu Cys Pro Pro Pro Pro Arg Thr Gly Pro Cys		
Arg		
130	135	140
Gln Arg Leu Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile		
Phe		
145	150	155
160		

(2) INFORMATION FOR SEQ ID NO:21:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 160 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

Gln Pro Arg Ser Pro Lys Ser Lys Arg Lys Gly Gln Gly Arg Pro			
Gly			
1	5	10	15
Pro Leu Ala Pro Gly Pro His Gln Val Pro Leu Asp Leu Val Ser			
Arg			
20	25	30	
Met Lys Pro Tyr Ala Arg Met Glu Glu Tyr Glu Arg Asn Ile Glu			
Glu			
35	40	45	
Met Val Ala Gln Leu Arg Asn Ser Ser Glu Leu Ala Gln Arg Lys			
Cys			

50	55	60
Glu Val Asn Leu Gln Leu Trp Met Ser Asn Lys Arg Ser Leu Ser		
Pro		
65	70	75
80		
Trp Gly Tyr Ser Ile Asn His Asp Pro Ser Arg Ile Pro Val Asp		
Leu		
85	90	95
Pro Glu Ala Arg Cys Leu Cys Leu Gly Cys Val Asn Pro Phe Thr		
Met		
100	105	110
Gln Glu Asp Arg Ser Met Val Ser Val Pro Val Phe Ser Gln Val		
Pro		
115	120	125
Val Arg Arg Arg Leu Cys Pro Pro Pro Arg Thr Gly Pro Cys		
Arg		
130	135	140
Gln Arg Phe Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile		
Phe		
145	150	155
160		

(2) INFORMATION FOR SEQ ID NO:22:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 160 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:

Gln Pro Arg Ser Pro Lys Ser Lys Arg Lys Gly Gln Gly Arg Pro			
Gly			
1	5	10	15
Pro Leu Ala Pro Gly Pro His Gln Val Pro Leu Asp Leu Val Gly			
Arg			
20	25	30	
Met Lys Pro Tyr Ala Arg Met Glu Glu Tyr Glu Arg Asn Ile Glu			
Glu			
35	40	45	
Met Val Ala Gln Leu Arg Asn Ser Ser Glu Leu Ala Gln Arg Lys			
Cys			
50	55	60	
Glu Val Asn Leu Gln Leu Trp Met Ser Asn Lys Arg Ser Leu Ser			
Pro			
65	70	75	
80			

(2) INFORMATION FOR SEQ ID NO:23:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 160 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

(2) INFORMATION FOR SEQ ID NO:24:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 160 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

130	135	140
Gln Arg Ala Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile		
Phe		
145	150	155
160		

(2) INFORMATION FOR SEQ ID NO:25:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 160 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:

Gln Pro Arg Val Pro Lys Ser Lys Arg Lys Gly Gln Gly Arg Pro			
Gly			
1	5	10	15
Pro Leu Ala Pro Gly Pro His Gln Val Pro Leu Asp Leu Val Ser			
Arg			
20	25	30	
Met Lys Pro Tyr Ala Arg Met Glu Glu Tyr Glu Arg Asn Ile Glu			
Glu			
35	40	45	
Met Val Ala Gln Leu Arg Asn Ser Ser Glu Leu Ala Gln Arg Lys			
Cys			
50	55	60	
Glu Val Asn Leu Gln Leu Trp Met Ser Asn Lys Arg Ser Leu Ser			
Pro			
65	70	75	
80			
Trp Gly Tyr Ser Ile Asn His Asp Pro Ser Arg Ile Pro Val Asp			
Leu			
85	90	95	
Pro Glu Ala Arg Cys Leu Cys Leu Gly Cys Val Asn Pro Phe Thr			
Met			
100	105	110	
Gln Glu Asp Arg Ser Met Val Ser Val Pro Val Phe Ser Gln Val			
Pro			
115	120	125	
Val Arg Arg Arg Leu Cys Pro Pro Pro Pro Arg Thr Gly Pro Cys			
Arg			
130	135	140	
Gln Arg Ala Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile			
Phe			
145	150	155	
160			

(2) INFORMATION FOR SEQ ID NO:26:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 97 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:

(2) INFORMATION FOR SEQ ID NO:27:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 100 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:

Pro	Arg	Ser	Pro	Lys	Ser	Lys	Arg	Lys	Gly	Gln	Gly	Arg	Pro	Gly
Pro														
1				5					10					15
Leu	Ala	Pro	Gly	Pro	His	Gln	Val	Pro	Leu	Asp	Leu	Val	Ser	Arg
Met														
									20		25			30

Lys	Pro	Tyr	Ala	Arg	Met	Glu	Glu	Tyr	Glu	Arg	Asn	Ile	Glu	Glu
Met														
	35					40						45		
Val	Ala	Gln	Leu	Arg	Asn	Ser	Ser	Glu	Leu	Ala	Gln	Arg	Lys	Cys
Glu														
	50					55						60		
Val	Asn	Leu	Gln	Leu	Trp	Met	Ser	Asn	Lys	Arg	Ser	Leu	Ser	Pro
Trp														
	65					70						75		
	80													
Gly	Tyr	Ser	Ile	Asn	His	Asp	Pro	Ser	Arg	Ile	Pro	Val	Asp	Leu
Pro														
	85											90		95
Glu	Ala	Arg	Cys											
	100													

(2) INFORMATION FOR SEQ ID NO:28:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 17 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:

Pro	Arg	Ser	Pro	Lys	Ser	Lys	Arg	Lys	Gly	Gln	Gly	Arg	Pro	Gly
Pro														
1			5						10				15	
Leu														

(2) INFORMATION FOR SEQ ID NO:29:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 17 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:29:

Arg	Met	Lys	Pro	Tyr	Ala	Arg	Met	Glu	Glu	Tyr	Glu	Arg	Asn	Ile
Glu														
1			5							10				15
Glu														

(2) INFORMATION FOR SEQ ID NO:30:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 16 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:30:

Asn	His	Asp	Pro
Ser	Arg	Arg	Ile
1	5	10	15

(2) INFORMATION FOR SEQ ID NO:31:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:31:

Pro	Val	Arg	Arg
Cys	Arg	Arg	Leu
1	5	10	15
Cys			
Arg Gln Arg			

(2) INFORMATION FOR SEQ ID NO:32:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 47 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:32:

Pro	Arg	Ser	Pro
Pro	Lys	Ser	Lys
1	5	10	15
Leu	Ala	Pro	Gly
Met	Pro	His	Gln
		Val	Pro
		Lys	Leu
			Asp
			Leu
			Val
			Ser
			Arg
		20	25
		Lys	Tyr
		Pro	Tyr
		Ala	Arg
		Arg	Met
		Glu	Glu
		Tyr	Glu
		Glu	Arg
			Asn
			Ile
			Glu
			Glu

35

40

45

(2) INFORMATION FOR SEQ ID NO:33:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 70 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:33:

(2) INFORMATION FOR SEQ ID NO:34:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 61 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:34:

Asn	His	Asp	Pro	Ser	Arg	Ile	Pro	Val	Asp	Leu	Pro	Glu	Ala	Arg			
Cys																	
1				5							10			15			
Leu	Cys	Leu	Gly	Cys	Val	Asn	Pro	Phe	Thr	Met	Gln	Glu	Asp	Arg			
Ser																	
							20			25			30				
Met	Val	Ser	Val	Pro	Val	Phe	Ser	Gln	Val	Pro	Val	Arg	Arg	Arg			
Leu																	
												35		40		45	

Cys Pro Pro Pro Pro Arg Thr Gly Pro Cys Arg Gln Arg
50 55 60

(2) INFORMATION FOR SEQ ID NO:35:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 73 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(2) INFORMATION FOR SEO ID NO:36:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 158 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:36:

35	40	45
Ala Gln Leu Arg Asn Ser Ser	Glu Leu Ala Gln Arg Lys Cys Glu	
Val		
50	55	60
Asn Leu Gln Leu Trp Met Ser	Asn Lys Arg Ser Leu Ser Pro Trp	
Gly		
65	70	75
80		
Tyr Ser Ile Asn His Asp Pro Ser Arg Ile Pro Val Asp Leu Pro		
Glu		
85	90	95
Ala Arg Cys Leu Cys Leu Gly Cys Val	Asn Pro Phe Thr Met Gln	
Glu		
100	105	110
Asp Arg Ser Met Val Ser Val Pro Val Phe Ser Gln Val Pro Val		
Arg		
115	120	125
Arg Arg Leu Cys Pro Pro Pro	Arg Thr Gly Pro Cys Arg Gln	
Arg		
130	135	140
Ala Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile Phe		
145	150	155

(2) INFORMATION FOR SEQ ID NO:37:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 154 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:37:

Ser Lys Arg Lys Gly Gln Gly Arg Pro Gly Pro Leu Ala Pro Gly			
Pro			
1	5	10	15
His Gln Val Pro Leu Asp Leu Val Ser Arg Met Lys Pro Tyr Ala			
Arg			
20	25	30	
Met Glu Glu Tyr Glu Arg Asn Ile Glu Glu Met Val Ala Gln Leu			
Arg			
35	40	45	
Asn Ser Ser Glu Leu Ala Gln Arg Lys Cys Glu Val Asn Leu Gln			
Leu			
50	55	60	
Trp Met Ser Asn Lys Arg Ser Leu Ser Pro Trp Gly Tyr Ser Ile			
Asn			
65	70	75	
80			

(2) INFORMATION FOR SEQ ID NO:38:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 151 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:38:

```

Lys Gly Gln Gly Arg Pro Gly Pro Leu Ala Pro Gly Pro His Gln
Val
 1           5           10           15
 Pro Leu Asp Leu Val Ser Arg Met Lys Pro Tyr Ala Arg Met Glu
Glu
 20           25           30
 Tyr Glu Arg Asn Ile Glu Glu Met Val Ala Gln Leu Arg Asn Ser
Ser
 35           40           45
 Glu Leu Ala Gln Arg Lys Cys Glu Val Asn Leu Gln Leu Trp Met
Ser
 50           55           60
 Asn Lys Arg Ser Leu Ser Pro Trp Gly Tyr Ser Ile Asn His Asp
Pro
 65           70           75
 80
 Ser Arg Ile Pro Val Asp Leu Pro Glu Ala Arg Cys Leu Cys Leu
Gly
 85           90           95
 Cys Val Asn Pro Phe Thr Met Gln Glu Asp Arg Ser Met Val Ser
Val
 100          105          110
 Pro Val Phe Ser Gln Val Pro Val Arg Arg Arg Leu Cys Pro Pro
Pro

```

115	120	125
Pro Arg Thr Gly Pro Cys Arg Gln Arg Ala Val Met Glu Thr Ile		
Ala		
130	135	140
Val Gly Cys Thr Cys Ile Phe		
145	150	

(2) INFORMATION FOR SEQ ID NO:39:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 160 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:39:

(2) INFORMATION FOR SEQ ID NO:40:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 158 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:40:

Arg	Asn	Thr	Lys	Gly	Lys	Arg	Gly	Gln	Gly	Arg	Pro	Ser	Pro	
Leu														
1				5					10				15	
Ala	Pro	Gly	Pro	His	Gln	Val	Pro	Leu	Asp	Leu	Val	Ser	Arg	Val
Lys														
									25					30
Pro	Tyr	Ala	Arg	Met	Glu	Glu	Tyr	Glu	Arg	Asn	Leu	Gly	Glu	Met
Val														
					35			40					45	
Ala	Gln	Leu	Arg	Asn	Ser	Ser	Glu	Pro	Ala	Lys	Lys	Lys	Cys	Glu
Val														
					50			55				60		
Asn	Leu	Gln	Leu	Trp	Leu	Ser	Asn	Lys	Arg	Ser	Leu	Ser	Pro	Trp
Gly														
					65			70				75		
80														
Tyr	Ser	Ile	Asn	His	Asp	Pro	Ser	Arg	Ile	Pro	Ala	Asp	Leu	Pro
Glu														
					85				90				95	
Ala	Arg	Cys	Leu	Cys	Leu	Gly	Cys	Val	Asn	Pro	Phe	Thr	Met	Gln
Glu														
					100			105				110		
Asp	Arg	Ser	Met	Val	Ser	Val	Pro	Val	Phe	Ser	Gln	Val	Pro	Val
Arg														
					115			120				125		
Arg	Arg	Leu	Cys	Pro	Gln	Pro	Pro	Arg	Pro	Gly	Pro	Cys	Arg	Gln
Arg														
					130			135				140		
Val	Val	Met	Glu	Thr	Ile	Ala	Val	Gly	Cys	Thr	Cys	Ile	Phe	
145												155		

(2) INFORMATION FOR SEQ ID NO:41:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 153 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:41:

Lys Arg Lys Gly Gln Gly Arg Pro Gly Pro Leu Ala Pro Gly Pro
 His
 1 5 10 15
 Gln Val Pro Leu Asp Leu Val Ser Arg Met Lys Pro Tyr Ala Arg
 Met
 20 25 30
 Glu Glu Tyr Glu Arg Asn Ile Glu Glu Met Val Ala Gln Leu Arg
 Asn
 35 40 45

Ser Ser Glu Leu Ala Gln Arg Lys Cys Glu Val Asn Leu Gln Leu
 Trp
 50 55 60
 Met Ser Asn Lys Arg Ser Leu Ser Pro Trp Gly Tyr Ser Ile Asn
 His
 65 70 75
 80
 Asp Pro Ser Arg Ile Pro Val Asp Leu Pro Glu Ala Arg Cys Leu
 Cys
 85 90 95
 Leu Gly Cys Val Asn Pro Phe Thr Met Gln Glu Asp Arg Ser Met
 Val
 100 105 110
 Ser Val Pro Val Phe Ser Gln Val Pro Val Arg Arg Arg Leu Cys
 Pro
 115 120 125
 Pro Pro Pro Arg Thr Gly Pro Cys Arg Gln Arg Ala Val Met Glu
 Thr
 130 135 140
 Ile Ala Val Gly Cys Thr Cys Ile Phe
 145 150

(2) INFORMATION FOR SEQ ID NO:42:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 128 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:42:

Met Lys Pro Tyr Ala Arg Met Glu Glu Tyr Glu Arg Asn Ile Glu
 Glu

1	5	10	15
Met Val Ala Gln Leu Arg Asn Ser Ser	Glu Leu Ala Gln Arg Lys		
Cys			
20	25	30	
Glu Val Asn Leu Gln Leu Trp Met Ser Asn Lys Arg Ser Leu Ser			
Pro			
35	40	45	
Trp Gly Tyr Ser Ile Asn His Asp Pro Ser Arg Ile Pro Val Asp			
Leu			
50	55	60	
Pro Glu Ala Arg Cys Leu Cys Leu Gly Cys Val Asn Pro Phe Thr			
Met			
65	70	75	
80			
Gln Glu Asp Arg Ser Met Val Ser Val Pro Val Phe Ser Gln Val			
Pro			
85	90	95	
Val Arg Arg Arg Leu Cys Pro Pro Pro Arg Thr Gly Pro Cys			
Arg			
100	105	110	
Gln Arg Ala Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile			
Phe			
115	120	125	

(2) INFORMATION FOR SEQ ID NO:43:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 157 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:43:

Arg Ser Pro Lys Ser Lys Arg Lys Gly Gln Gly Arg Pro Gly Pro			
Leu			
1	5	10	15
Ala Pro Gly Pro His Gln Val Pro Leu Asp Leu Val Ser Arg Met			
Lys			
20	25	30	
Pro Tyr Ala Arg Met Glu Glu Tyr Glu Arg Asn Ile Glu Glu Met			
Val			
35	40	45	
Ala Gln Leu Arg Asn Ser Ser Glu Leu Ala Gln Arg Lys Cys Glu			
Val			
50	55	60	
Asn Leu Gln Leu Trp Met Ser Asn Lys Arg Ser Leu Ser Pro Trp			
Gly			

65	70	75
80		
Tyr Ser Ile Asn His Asp Pro Ser Arg Ile Pro Val Asp Leu Pro		
Glu		
85	90	95
Ala Arg Cys Leu Cys Leu Gly Cys Val Asn Pro Phe Thr Met Gln		
Glu		
100	105	110
Asp Arg Ser Met Val Ser Val Pro Val Phe Ser Gln Val Pro Val		
Arg		
115	120	125
Arg Arg Leu Cys Pro Pro Pro Arg Thr Gly Pro Cys Arg Gln		
Arg		
130	135	140
Ala Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile		
145	150	155